

Claims

1. An exhaust system for an internal combustion engine on a vehicle, in particular a motor vehicle, having an exhaust catalytic converter and having a probe assembly in the area of the exhaust catalytic converter as a component of a lambda control device by means of which the internal combustion engine may be switched alternately between a lean-fuel operating range, in which the internal combustion engine is operated with a lean mixture having excess air and thus excess oxygen and a rich-fuel operating range, in which the internal combustion engine is operated with an air deficiency and thus oxygen deficiency, as a function of the probe signals detected by means of the probe assembly,

characterized in that

the probe assembly is in the form of a single lambda probe delivering a constant probe signal, such lambda probe being mounted downstream from the exhaust catalytic converter and by means of which, in conjunction with the lambda control device, the increase in the amount of oxygen in the exhaust gas flow is determined and over the entire period of the lean-fuel operating phase and the decrease in the amount of oxygen in the exhaust gas flow is determined over the entire period of the rich-fuel operating phase, in relation to a specified oxygen amount reference value ( $U_0$ ), an oxygen-dependent threshold switching value ( $U_1, U_2; U_1', U_2'$ ) being specified which, when reached, causes switching of the lambda control device to the respective other area of operation.

2. The exhaust gas system as specified in claim 1, wherein the threshold switching value ( $U_1, U_2; U_1', U_2'$ ) may also be determined and/or adapted as a function of an oxygen storage capacity and/or a degree of conversion of one or more pollutant components.
3. The exhaust gas system as specified in claim 1 or 2, wherein the threshold switching value ( $U_1, U_2; U_1', U_2'$ ) is in the form of the gradients of increase or decrease in the oxygen of the exhaust downstream from the catalytic converter.
4. The exhaust gas system as specified in one of claims 1 to 3, wherein the threshold switching value is entered in a performance graph of an engine control device.
5. The exhaust gas system as specified in one of claims 1 to 4, wherein the oxygen amount reference value is in each instance in the form of the preceding threshold switching value ( $U_1, U_2; U_1', U_2'$ ).